What is claimed is:

1. A method of detecting a gas phase material comprising:

providing a sensor comprising first and second electrodes, a detection surface extending between the first electrode and the second electrode, and a detector operatively connected to the first and second electrodes;

exposing the detection surface to the gas phase material, wherein an electrically conductive film forms on the detection surface between the first and second electrodes; and

detecting a change in conductivity between the first and second electrodes with the detector.

2. A method according to claim 1, wherein the gas phase material comprises ruthenium.

3. A method according to claim 1, wherein the gas phase material comprises ruthenium tetraoxide.

4. A method according to claim 1, wherein the gas phase material comprises iridium.

5. A method according to claim 1, wherein the gas phase material comprises rhodium.

6. A method of detecting a gas phase material comprising:

providing a sensor comprising first and second electrodes, a detection surface extending between the first electrode and the second electrode, and a detector operatively connected to the first and second electrodes, wherein the detection surface is not electrically conductive;

exposing the sensor to the gas phase material, wherein an electrically conductive film forms on the detection surface between the first and second electrodes; and

detecting electrical conductivity of the electrically conductive film between the first and second electrodes with the detector.

7. A method according to claim 6, wherein the detection surface comprises a polymer.

8. A method according to claim 6, wherein the detection surface comprises polypropylene.

9. A method according to claim 6, wherein the detection surface comprises glass.

10. A method of detecting a gas phase material comprising:

providing a sensor comprising first and second electrodes, a detection surface extending between the first electrode and the second electrode, and a detector operatively connected to the first and second electrodes;

heating the detection surface above ambient temperature;

exposing the detection surface to the gas phase material, wherein an electrically conductive film forms on the detection surface between the first and second electrodes; and

detecting a change in conductivity between the first and second electrodes with the detector.

11. A method according to claim 10, wherein the gas phase material comprises ruthenium, and further wherein heating the detection surface comprises heating the detection surface up to about 100°C or less.

12. A sensor for detecting a gas phase material in an environment, the detector comprising:

first and second electrodes;

a detection surface extending between the first electrode and the second electrode;

a detector operatively connected to the first and second electrodes.

13. A sensor according to claim 12, wherein the detection surface comprises a polymer.

14. A sensor according to claim 12, wherein the detection surface comprises polypropylene.

15. A sensor according to claim 12, wherein the detection surface comprises glass.

16. A sensor according to claim 12, wherein the detector comprises an electronic circuit capable of detecting a change in electrical conductivity between the first and second electrodes.

17. A sensor for detecting a gas phase material in an environment, the detector comprising:

first and second electrodes;

a detection surface extending between the first electrode and the second electrode;

a heater capable of providing thermal energy to the detection surface; and

a detector operatively connected to the first and second electrodes.

18. A sensor according to claim 17, wherein the detection surface comprises a polymer.

19. A sensor according to claim 17, wherein the detection surface comprises glass.

20. A sensor according to claim 12, wherein the detector comprises an electronic circuit capable of detecting a change in electrical conductivity between the first and second electrodes.